

COST *and* MANAGEMENT

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R Dawson, F.F.C.S., F.C.I., Secretary-Manager and Editor

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• EDITORIAL •

Are We War Conscious?

More and more as one travels around the country does one get the idea that a great many of our citizens are still far from being war conscious. It is all very well to publish lists of war contracts, to state how much is being spent on the war effort and how much purchasing power has been increased or how much the unemployment figure has decreased as a result of the war effort. That tells only one side of the story. The other side is, how much do we as individuals, think of the war as being something which necessitates sacrifice on our part, not how much can we get out of it? There is still far too much complacency, too much wishful thinking and, much as one regrets to say it, too much "don't give a darn" type of thinking—if one can call it thinking. We need to be shaken out of our lethargy and we will not be wholly war conscious until we are shaken. True, increased taxation and further restrictions have done something to bring to us a realization that we are at war, but something more is needed. How many people are subscribing to War Savings Certificates as much as they should? How many people think of saving at all and of those who do, how many think in terms of war loans or Savings Certificates? Is it not a fact that far too many of us look upon increased purchasing power as a means to obtain those things we have thought we wanted for a long time and unconsciously, perhaps, but nevertheless do, actually desire that the war continue? There isn't much doubt that this is the attitude of a lot of people, and taken altogether we have not so far taken this war as seriously as we should. True, there has been a lot of genuine admiration for the courage of the British people; true, we would not as a nation withhold either our admiration for the British and Greek stand, or our help to those people, but the trouble seems to be that a lot of us do not think of the war problems as our problems. We still take far too much for granted. We need a severe jolt and it will probably come either with one government measure or another. Perhaps compulsory saving is the answer, or if not, then vastly increased taxes for everyone. Whatever it is, a lot of us need to have our ideas thoroughly revamped about this war. So far we have felt it very little. When income taxes are due maybe a lot of us will realize that we are at war and that sacrifices are very necessary for all of us, but that date is some time away. In any event unless we subscribe more and more to the war effort, each one of us either through war savings certificates or through succeeding war loans, we are liable to find our taxes very much increased; we are liable to find many restrictions placed upon both our habits and our spending. Then maybe we will wake up to the fact that there is a war on and that it is the immediate and serious concern of every one of us.

Across the Secretary's Desk

The passing month has been another busy period at this office, but it has also been a very enjoyable period. First of all, Student Sections are being or have been organized in the Kitchener, Niagara and Windsor Chapters, and we have had further evidence of the growth of our Society in more senses than one.

Starting with a Joint Meeting between the Niagara and Hamilton Chapters at St. Catharines, when a good attendance on a very bad night heard a very enjoyable and instructive talk by Mr. R. R. Renner of Buffalo on the Last In—First Out Method, it has been quite a succession of meetings. Following this meeting at St. Catharines, the Students of the Niagara district met and decided to form a Student Section, and Harold Fox of Welland was appointed Chairman pro tem. Two of the boys attended the next meeting of the Hamilton Student Section to learn just what the Hamilton gang were doing in the way of studies, and they went away with the firm conviction that Hamilton had something. Next I spent most of the afternoon and all night in a trip to Windsor and return, where the Windsor Students decided to form a Student Section. Omer Cox was appointed Chairman, Alex. McGrath, Vice-Chairman, and Dick Nunn, Secretary, and at the meeting referred to the Windsor Section decided to follow Hamilton's lead. Prior to this I had addressed members of the Kitchener Chapter at Guelph on a particularly dirty night. Then a trip to Toronto to hear Frank Wood of the Department of Munitions and Supply at Ottawa give a most instructive talk on "Cost Accounting for War Contracts". This was one of the best meetings I have ever attended in Toronto. There were over one hundred present at the dinner and many more came for the meeting. It was distinct evidence of the rejuvenation, if I may call it that, of the Toronto Chapter, which is having a most excellent season. Present at this meeting were Harvey Spry, Past Chairman of the Niagara Chapter, and Dan Seebach and Jimmy Babcock, Chairman and Vice-Chairman of the Kitchener Chapter, while Aleck Howey, popular Past President of the Society, dropped in for the meeting. Then came a visit by Hamilton Students to the Toronto Student meeting, where they were welcomed by Max Coutts, Chairman of the Toronto Student Section, and listened to a talk by Bob Williams on Wage Incentives. By the way, this Toronto Student Section is really a "honey", and the officers are doing a grand job. Moreover the membership is increasing very rapidly. The next morning I was up bright and early for a trip to Ottawa. I met C. B. "Cece" Taylor, a member of our Toronto Chapter, and together we travelled to the Capital. We arrived at the Laurentian Club just as the boys were sitting down to dinner. Twenty-eight were present for the dinner and several more came in for the meeting, which was addressed by "Cece". His talk, illustrated by lantern slides, on "A New Tool for Management", was very much appreciated, and there was quite a good discussion period. I was the engineer in charge of the lantern on this occasion and, as I didn't "bust" anything, I presume this part of the program must be considered a success. In fact, the whole meeting was a success and I have very fine hopes for this new chapter. There were several members absent, but the attendance was quite satisfactory and there was an abundance of interest displayed. Following this meeting, a bunch of us sat

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in the club talking over society and other matters, there was an executive meeting of the chapter, and then I caught the late train home, and here I am finishing up "Cost and Management" copy.

Next week there are three meetings I must try to attend, in St. Catharine on Tuesday, Hamilton on Wednesday, and Kitchener on Thursday. There are many other things to do, but if I hurry I will probably be able to clean up before Christmas, which is close upon us, and so, to everyone, my sincere wish is for a Happy Christmas and a Very Prosperous New Year.

R. D.

New Members

Toronto Chapter.

- Harold Gibson, John Inglis & Co., Ltd.
- W. J. McGroarty, Geo. Weston Bread & Cakes Ltd.
- F. A. Riddell, Geo. Weston Bread & Cakes Ltd.
- H. C. Hay, Hamilton Gear & Machine Co. Ltd.
- Edward Fraser, Dominion Wheel & Foundries Ltd.
- J. H. Irwin, Dominion Wheel & Foundries Ltd.
- H. W. Hill, Canadian Wm. A. Rogers Co. Ltd.
- A. G. Crocker, Canadian Gypsum Co. Ltd., Weston.

London Chapter.

- Ralph B. Scott, Empire Brass Mfg. Co. Ltd.

Windsor Chapter.

- Gordon R. James, Kelsey Wheel Co. Ltd.
- R. Nunn, Chrysler Corp. of Canada Ltd.

Montreal Chapter.

- J. W. B. Bannerman, Noorduyn Aviation Ltd.
- G. S. Ritchie, Noorduyn Aviation Ltd.
- J. W. Moreland, Noorduyn Aviation Ltd.
- C. S. McLaren, Noorduyn Aviation Ltd.
- C. R. Bawn, Quebec Gold Mining Corp.
- E. K. Faulds, Canada Envelope Company.
- J. F. Turcotte, Banque Canadienne Nationale.
- J. E. Beauregard, Banque Canadienne Nationale.
- R. St. Onge, Banque Canadienne Nationale.

Literature Received

Taxation of Excess Profits. Business Management, November.

A very fine and instructive article by an old friend in R. B. Taylor,

C.A.

The Control of Gross Margins. N.A.C.A., November 15.

Management Versus Budgetary Control. N.A.C.A., November 15.

The Control of Capital Expenditures. N.A.C.A., November 15.

All three of these articles, dealing with managerial problems and the Accountant's part in their solution, should be read by all Industrial and Cost Accountants.

CANADIAN INDUSTRIAL ACTIVITY RISES STILL HIGHER

Forecasting. N.A.C.A., December 1.

Forecasting and Budgeting. N.A.C.A., December 1.

Two articles on similar subjects which make mighty fine reading.

Recent Changes in the Operation of Foreign Exchange

Control of Canada. Can. Chartered Acct., December.

A most instructive and interesting article giving details of the various changes in oreign Exchange Control.

Canadian Industrial Activity Rises Still Higher

From La Salle Business Bulletin.

The upward movement in the rate of production continues to carry business in Canada to new peaks each month. Total output of factories and mines this year will surpass that of any previous year, and indications point toward further advances for several months.

Industrial activity is more than 19 per cent above the rate of a year ago, and 29 per cent higher than the 1937 average. The trend has been upward and without significant interruption for almost two years. Ninety-five per cent of current factory capacity is now being utilized as compared with 85 per cent a year ago.

Nearly all branches of industry have shared in the expansion, although the greatest gains have been made in the automotive trades, iron and steel, lumber, and metals. The output of food products, chemicals, and paper has changed but little during the last few months. The clothing industry has declined slightly but is still 10 per cent higher than last year at this time. Increased production of shoes and silk goods has offset the reduction in the abnormal demand for military uniforms. Activity in some of the smaller industries has slackened a little, but not enough to affect the general rising trend of business.

Retail sales have been increasing at about the same rate as the production of goods. The volume, as measured in dollars, has been below the peak year; but because prices are lower, the physical quantity of goods sold is probably greater than ever before. This record has been achieved in spite of disappointing tourist trade and unsettled conditions among consumers. Visitors from the United States were about 20 per cent fewer than last year.

The construction industry has recovered rapidly and the total contracts awarded were 46 per cent higher than during the corresponding period last year. Most of the increase was due to governmental expenditures and industrial building, while residential building declined. Industrial building to expand plant capacity was four times that of 1939.

Export trade has risen to the highest point in ten years, and the total value is 31 per cent greater than last year. The reduction in shipments to Continental Europe has been more than made up by larger exports to the United Kingdom and to the United States. Imports which represent the purchase of essential raw materials have increased 46 per cent.

The outlook for the new year is that activity will remain high in every line of trade and industry.

Chapter Meetings

The following list the meetings of the various chapters for the balance of December so far as is known. It will be appreciated that due to the inability to plan programs far ahead during wartime, this list is of necessity somewhat restricted.

Montreal Chapter.

December 14th. Plant visit to Dominion Engineering Co. Ltd., Lachine, Que.

Toronto Chapter.

Mixed Bowling Night, December 18, at Karry's Eglinton Alleys, 378 Eglinton Ave. West, Toronto, at 5.45 p.m.

Hamilton Chapter.

December 18, at Fischer's Hotel, York and Park Streets. Dinner at 6.30 p.m.; meeting at 7.30 p.m. Speaker, R. J. Lowe, Controller, F. N. Burt, Inc., Buffalo, N.Y. Subject, "Budgets and Breakdowns".

Niagara Chapter.

December 17, at Leonard Hotel, St. Catharines. Dinner at 6.30; meeting at 7.30. Speaker, Geo. J. Maxwell, Canadian Kodak Co., Ltd., Mount Dennis. Subject, "Job Evaluation".

Kitchener Chapter.

Thursday, December 19, at Y.M.C.A., Kitchener. Speaker, R. J. Williams, Can. Wm. A. Rogers Co. Ltd., Toronto. Subject, "Standard Cost Control."

London Chapter.

Thursday, December 19, Hotel London, at 8 p.m. Speaker, W. J. Blackburn, Hiram Walker & Sons Ltd., Walkerville. Subject, "Fire Insurance and Allied Coverages".

Windsor Chapter.

Meeting, Thursday, December 19, Norton Palmer Hotel. Dinner at 6.30; meeting at 7.30. Speaker Mr. E. W. Morris, who will give an illustrated lecture on "Italy and the Mediterranean Sea."

Problems of Costing Aircraft Production

An Address by

DONALD R. PATTON, C.A.,

Before the Toronto, Kitchener, Niagara and Hamilton Chapters,

November 6th, 1940.

The Aircraft Industry in Canada.

The Canadian Aircraft Industry during the past year has been raised suddenly from the status of a group of struggling pioneers to an association which is of important and rapidly increasing proportions.

Problems of rapid expansion have had to be dealt with and without a doubt wonderful progress has been made in overcoming the many difficulties naturally encountered—difficulties particularly of Machinery, Patterns, Tooling, and the supply of material and labour.

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The industry has had a year of record achievement and its contribution to the success of the Empire's War Effort will from now on be making itself known in no uncertain manner.

Aircraft Costs.

It is not my intention to attempt to outline a System for costing aircraft production, but rather to discuss with you some of the many problems encountered in determining those costs, to consider alternative solutions, to discuss briefly some of the plans that have been adopted. No great attention will be given to routine but our discussion will be confined as much as possible to principles and problems with such general descriptions as may appear necessary.

Type of Cost System.

The first and the most important problem on which decision must be made is the extent of cost information which shall be made available, and hence the type of cost system which should be adopted.

We might consider three general plans—

1. Determination of the cost of each individual part, building up such costs progressively into detailed costs of
(a) Sub-assemblies, (b) Major Assemblies, (c) Assembly Groups or Components, and (d) Individual Finished Planes.
2. Determination of the cost of finished planes or groups of finished planes, in total without further analysis.
3. Combination, in some manner, of Plans 1 and 2.

Brief comment might be made on these three alternatives:—

Plan No. 1.—The cost information under this plan would show more detailed analysis and should prove more accurate. The cost work involved would be extensive but might well be justified by the details made available. This plan has already been adopted by some, at least, of the Canadian Manufacturers of Aircraft.

Plan No. 2.—It is doubtful whether the results under the second plan would be sufficiently informative to meet the requirements of the producer.

Plan No. 3.—A middle course might be adopted which would embrace certain features of Plan No. 1. but which would not go so far as to build up the cost of the finished plane on the basis of the cost of each individual part.

We might consider briefly the general principles of a plan falling in this classification. This plan would aim, primarily, at the determination, as a part of the normal accounting procedure, of the cost of major assemblies and subsequently Completed Planes by release groups—with detailed information available through subsequent analyses, as may be considered advisable.

We will presume that Tabulating Machines are available and provide—through the medium of its punched cards and summaries—the necessary tabulation and recording of information.

More specifically, the primary object of this System would be the determination as normal procedure of the cost of each major assembly in total for each release of planes. The cost of these major assemblies would be summarized under about seven groups, or components, which we might call the Wing, Empennage, Body, Power Plant, Fixed Equipment, Arma-

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ment, and Miscellaneous Equipment Group. The cost of these Groups would in turn be summarized to give the total cost of each release of finished planes.

In addition to the cost of assemblies, costs of Parts and Special Jobs would be determined in the following cases—

- (a) **Expense Parts**—Cost of minor inexpensive parts used in various phases of plane construction, in small or indeterminate quantities, would be accumulated in total under a separate inclusive order number under the general heading of Factory Supplies.
- (b) **Finished Parts**—More Senior Parts which at the time of fabrication cannot be allocated to releases would be manufactured and costed on separate properly numbered production orders and transferred on completion to Finished Parts Stores. Issue would be made on a Subsequent Production Order and charged at the determined cost price.
- (c) **Spare Parts**—Sufficient quantities of certain parts might be manufactured at one time for all plane releases together with an additional number to take care of subsequent spoilage, repair orders, etc. In these cases, an additional designation would be made for the spare Parts as an extra release, and parts would be costed in the regular way and transferred to Finished Parts Stores.
- (d) **Repair Orders**—Special orders would be issued and costs determined separately for repair orders.

Behind these primary costs of major assemblies, information would be available on the Tabulating Cards whereby, through division in accordance with an analytical numbering system, the cost of Minor Assemblies and of Individual Parts might be established as and when required.

In addition to, or in place of, this secondary analysis it might be found advisable to build up in the Cost Department an independent record of the cost of all parts manufactured in the regular process of plane production. This record might or might not be controlled by the Assembly Cost Summarizing Sheets. The information thus obtained would be of particular value in providing costs on which prices for spare parts, repair orders, etc. might be based.

The Problem of Numbering

The efficient accumulation of part and assembly costs depends to a marked degree on the effectiveness of the numbering system adopted. Every part and every assembly would have its proper designation and no work might be undertaken without an order bearing the required number.

The Number 12-960F-315-2 would be built up as follows—

Prefix - 12 - To designate the particular project.

Basic Account Number - 960 - To designate the group and major assembly.

Release letter - F - To designate the plane release.

Suffix - 315-2 - To designate the particular minor assembly and part.

The number designation would permit effective sorting, tabulating and summarizing of cards—and would permit accumulation of costs as above, (a) primarily by major assembly and release groups, (b) secondarily by minor assemblies and individual parts.

All numbered parts would, of course, build up into complete Finished Planes.

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Production Orders, numbered as above would contain a full bill of materials—(a) raw materials, (b) finished parts or (c) expense parts—and would be prepared in accordance with the specifications of the Aircraft.

Production Control.

Production Control would be responsible for planning production, for issuing production orders, for instituting operations after advice that materials and machines are available, and for routing and control of such production throughout the plant.

Separate production orders would be issued for each assembly or part, in release quantities, e.g. if sufficient number of parts 315-2 were to be made up for three release of planes, three production orders would be necessary.

Material Control

Material Control would be responsible for procuring all materials used in production and the maintenance of an accurate quantitative materials inventory.

Requests for Purchase Orders would be issued by that Department and on advice that a Purchase Order has been issued notation would be made on Materials Ordered Card. When Materials are received notation would be made on this card and on supplementary stores inventory card. The problem of entering materials promptly when unpacking or inspection is delayed might be overcome by special "advance" notification from the receiving department.

The problem of Materials Inventory brings out the impracticability of periodical total physical inventories and the substitution of continuous inventory verification by an inspection official or crew.

Prior to the issue of Production Orders verification would be made that materials are available. These materials should at that time be reserved, best by notation in additional columns on the material cards.

Materials issued would be properly recorded on the cards and the balances on hand extended.

A Materials Price Record should be maintained, probably as a separate unit, and prices extended at inventory dates to the balance appearing on the quantitative cards. The price record might also be necessary to complete comparative prices at basic dates where production contracts contain escalator clauses. The problem of pricing involves particular care in determining the basis of the price to be used, (a) whether inward freight is to be added, (b) whether a Standard Price or the Fixed Price at Escalator Date would be feasible, diverting differences to a variance or Price Variance Account, etc.

Completed Production Orders bearing particulars of materials would be forwarded to the Tabulating Department and Material Cards prepared for each number.

Payment and Distribution of Labour—Payroll.

Total Labour time would be recorded on the Clock Cards, which would be checked each day with Workmen's Daily Distribution Records. Tabulating Machine Cards would record the weekly hours and wages and would be used for preparation of the weekly payroll.

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The problem of payroll preparation tends, at present, to increase, even if payment is made on an hourly basis, for proper adjustment must be made for overtime and for deductions on account of Group insurance, National Defence Tax, Wage Board levies and for employees contributions for the Red Cross and for War Savings Certificates.

The problem of efficient payment to workmen might be met somewhat as follows—

Duplicates of the Weekly Tabulating Machine Wage Cards would be prepared and distributed to the men on the morning of the weekly payment. Later in the day the paymaster would attend in each department, would pass out the wage envelope on identification of the employee and receipt of his Card properly signed.

Labor Distribution.

The Problem of Distribution of the Workmen's time is somewhat more serious.

Daily Tabulating Machine Cards bearing each man's name only might be distributed each morning to the Timekeepers. A Signal flag system might be adopted. When the worker nears the end of his present job he would raise the Signal flag on his bench, the Timekeeper would attend and record the time against the Production Order Number Completed and the new one being started. The Workman's daily cards would be turned into the Factory Office and, after checking with the Time Records, would be forwarded to the Machine Tabulating Department where cards would be prepared for each man's time on each job.

Overhead.

The recording of applied overhead offers no particular problem as, if distribution is made on the basis of Labour Cost or Hours, it can be contained on the same cards and summaries as Labour.

Several other problems, however, do arise, e.g.—

- (a) Should Manufacturing Expense be distributed separately or should it be included with Administrative and General Overhead? If the latter, what adjustment should be made in inventories at the end of the fiscal period?
- (b) Should selling expenses and financial charges be included and distributed with Administrative Expense?
- (c) Should the same basis and rates of distribution prevail for all departments?
- (d) Should rates be fixed for a half year or a year in advance or should they be adjusted monthly?
- (e) What Provision for Depreciation should be made in view of the specialized plant and equipment necessary, and in view of the indefinite term of life?
- (f) What Provision should be made for writing off preliminary expenditures on account of Development, Engineering, Rights, Organization, etc.

Summaries.

Summaries of information of Material, Labour and Overhead Costs, divided by Major Assemblies and by Releases, compiled from the details

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tabulated by the Machine, should be supplied promptly to the Cost Department.

The information so reported would be recorded by the Cost Department on the Assembly Cost Records, giving a weekly and accumulated cost of each such assembly.

These would, in turn, be continuously summarized to give

- (a) Total cost of each release of planes, weekly, and accumulation to date.
- (b) Comparative Cost of each assembly for each release for the entire project.

These would be reconciled monthly with the respective Work-in-Process accounts.

Weekly summaries of Material, Labour, and Overhead by Part numbers should also be supplied by the Tabulating Department where a Parts Cost Record is being maintained by the Cost Department.

Control by the General Accounts.

Certain problems will be encountered when consideration is given to the system of control by the General Ledger.

We must decide first whether the Cost Records should tie in with and be controlled by accounts on the General Ledger.

If it is decided that such control should exist some problems still remain—

- (a) Should Control accounts include Materials, Finished Parts, Spare Parts, etc. as well as Work-in-Process?
- (b) What further division of these total control accounts should be made?
- (c) Should the control accounts appear on the General Ledger or on a separate Factory Ledger Controlled by the General Ledger?
- (d) Should details of Manufacturing Expense and General Overhead appear on a Subsidiary Ledger and Controls only on the General Ledger?
- (e) Should a Plant Ledger be established to record the Details of Plant and Equipment and accumulating Depreciation?

Statements.

The particular problem in respect of the operating and Financial Statements is their early completion and presentation to the Executive.

The information may be presented in good form but if it is late, it loses much of its value.

Reports.

Certain reports must of necessity be prepared at regular intervals, e.g., reports of progress for payment claims, budgets of expenditure, and periodic cash Statements. In addition to these a definite plan of weekly and monthly cost and production reports should be drawn up so that the information essential to Control and Management may be prepared and presented to the proper officials by the Cost and Accounting Departments as a matter of routine.

The greater part of the labour necessary for the accumulation of the various summaries would have been expended when the various details have been tabulated, posted, and placed on file, but this information would be of relatively small value if not carried beyond that point.

Cost Accounting in the Aircraft Industry

An Address by

LLOYD D. BROWN,

Noorduyn Aviation Corp. Ltd., Before Montreal Chapter,

November 15, 1940.

In comparison with other, and longer established industries, the one of aircraft manufacturing is still in its infancy. Consequently the progress made to date in methods of obtaining accurate costs of manufacture is little short of amazing.

For a large portion of the data which I am using tonight, I am indebted to Mr. Frank Beranek, who is Assistant Treasurer of North American Aviation, Inc., in Inglewood, Calif. For the balance, I am drawing on personal experience obtained as one of the original members of the North American engineering organization, plus the practical experience obtained in Australia in setting up and operating a production system similar to North America's. I might add that in Australia the company with which I was associated is now the only Australian company producing aircraft in a steady flow for Empire defense in Australasia. This in itself was an achievement of no mean proportion. Beginning with twelve trained men we built up an organization of 1000 men in less than two years. This is remarkable as we not only had to train our personnel, but we had to build all of the innumerable accessories so casually purchased on the open market in this country. Such items as engines, pumps, generators, rivets, bolts, valves, etc., were either manufactured by ourselves, or by other companies specially for us. To cost accounting personnel previously trained in recording costs of pig iron, building material, etc., this was one vast bewildering headache. However, to use an old expression, "All's well that ends well". Although it took time and painstaking care, and at times the task seemed well nigh impossible, it gradually began to take shape, and long before the previously mentioned two years were up, we were receiving accurate and up to date costs on everything manufactured and used in aircraft.

As you may, or may not, know, North American Aviation has achieved the enviable reputation of producing aircraft in a manner more closely paralleling the automobile industry than any other aircraft company in the United States. This has naturally resulted in obtaining finished aircraft in strict accordance with predetermined schedules, efficiently using all available manufacturing area, and accurately determining the costs involved in fabricating the component parts used.

As Noorduyn Aviation is presently manufacturing the Harvard trainer under a license agreement with North American, it is quite natural for us to be using a system of accounting basically similar to North American's. This system very briefly, consists of recording material, labour, and overhead costs by means of shop orders issued to the factory authorizing manufacture of the parts and assemblies required. Contracts are broken down into so called releases, designated by a letter for each release. These releases are determined by the number of finished aircraft estimated to be one month's production on any one contract. Supposing "X" release to be

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5 aircraft, this means factory orders will be issued, and actual manufacturing will be carried out, on a group of component parts for 5 aircraft at a time.

In the factory, labour costs are collected by timekeepers personally from various individuals engaged in direct productive labour. Material is summarized and costed directly from the production orders used for each part, and indirect labour, or overhead expense, is accumulated by means of special accounts which distribute the costs over the contract as a whole.

Work orders are issued to the factory in quadruplicate. They consist of four different colours for ready identification, and each is designed to be used for a different purpose. Full information regarding the operations to be performed, the material to be used, the account to be charged, the part number and quantity required, are on each order. One copy goes to the Cost Department to advise that the account concerned is to be opened. Another copy issued in the factory by the workman as authority to perform the work specified, and is accompanied by another copy of the order which is used by the Production Department to record the progress of the job involved. The fourth copy is used as a material requisition to draw from Stores the necessary material for the job. When the job is complete, one copy of the order is routed to the Cost Department thereby closing the account concerned, and thus signifying that the cost summary can be commenced. This procedure also prevents any additional costs from accumulating after an account has been closed.

The group we refer to as "Special Charges" consists of designated numbers to be used to collect the costs of necessary overhead expense. These charges cannot be allocated to any one part or release but must be distributed over the entire contract. This group embraces wasted efforts and scrapped material due to faulty workmanship, losses due to the inadvertent use of faulty material, losses due to errors in engineering, production, tooling, etc., and innumerable other reasons that combine to add grey hairs to a Production Manager's head.

The detailed breakdown of an airplane's cost varies with the methods of manufacture used by different companies. This is usually regarded as a trade secret so we will not discuss it here. Of the many methods used, all have as a basis the same object. It is my own opinion that any really efficient system must produce analytical data to be worth while. By that I mean a system that will produce accurate costs of material, and direct and indirect labour time in order to compare and adjust hours expended on jigs, assembly, and on operations. The data thus collected is invaluable for forecasts, estimating, and scheduling the flow of production. It is my opinion, and you may rightly assume that it is a prejudiced one, that Noordyn Aviation is rapidly obtaining, and shortly will have, one of the most efficient Cost Accounting systems in the Canadian aircraft industry. Achieving this goal will not be the result of simply specifying, "Here is a system based on current practice at North American Aviation, go ahead and use it."

First of all, engineering personnel must be trained to release engineering information in the sequence desired by the factory. Personnel in the Planning Dept., must be trained to make up and issue the production orders in the desired sequence. It is here that it is determined how a part shall

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be made and where. The Material Control department and the Stores personnel have to order, receive and record issues and balances on hand of the material used. Production Control personnel must be trained to identify and physically transport parts and orders through the factory systematically according to predetermined schedules. The workmen themselves must be trained to perform their allotted tasks efficiently, and timekeepers trained to record accurately the manufacturing time involved. And last, but not least, Cost Accounting personnel must be carefully chosen to pick up and analyze the information gained from the work orders and daily time cards.

I cannot profess to know anything about the detail processes by which costing information is analyzed and distributed. All we in production desire and need is a regular report on the various labour hours expended. This permits us to adjust schedules, increase or decrease personnel, and in many ways aids us to produce a certain number of aircraft on a certain date.

Mr. Bruce Hoyland, our Chief Accountant, is here tonight and I know he will be glad to answer any questions you may have concerning detail processes used by his department. It is enough for me to know that the time cards are tabulated and sorted automatically, and regularly I receive a report that literally renders me speechless for at least an hour. After twelve years spent in the aircraft industry, I am more than ever convinced that I was foolish never to think of farming. But as crazy as it is, I am also firmly convinced that, barring unforeseen circumstances, I'll die still worrying about why wings and fuselages do not fit when the drawing says they will.

In conclusion, I firmly believe that aviation has an excellent future in Canada, and after we have built enough airplanes to aid in kicking hell out of Hitler, I hope to still be here participating in that future and the subsequent development of Canada into the position of world prominence she deserves.

Forum Section

We publish below a question from a member in the Retail Store business in connection with the Excess Profits Tax Act. This question was submitted to two members in similar businesses and their replies are also published. In order to conform to our usual practice alphabetical names are substituted for the names of the companies concerned.—Editor.

Question.

Dear Sirs:

Will you kindly supply us with any information you can secure on the following, or publish the question without mentioning our name in "Cost and Management"?

Under Section 6, Paragraph b, of the Excess Profits Tax Act, 1940, provision is made for setting up a reserve, against increase of prices in Inventory values, to be allowed as a deduction in calculating Excess Profits.

This very fair provision means that Excess Profits are paid only on profits that have actually been made, and not on paper profits that may never be made.

FORUM SECTION

The quantities and prices of the 1939 Inventory are taken as the "Standard Inventory", against which to figure the reserve for increase in price on the same quantities.

This would be easy enough to set up say in a Pulp Mill where the Inventory was so many thousand cords of pulp wood, but in a Retail Store with thousands of items in stock I am at a loss to know how to solve the problem, and that is my question.

Can you find out please how any of the big stores are going to do this?

My tentative suggestion is to see if an arrangement can be made with the Income Tax Department to allow one to keep a record of the price changes, on say 100 items of staple stock, to establish an index of prices in your own business, which would then be applied to the total dollar value of the 1939 Inventory to calculate the reserve, and charges therein from year to year.

To me this seems like another state of confusion similar to the one the Department of National Revenue found themselves in with different rates of Sales Tax on sales to Wholesalers, Retailers, and Consumers.

They first allowed each business to establish its own rates on the basis of its price structure, and then the Minister had to publish set discounts from the Tax by Industries before any one knew where they were.

In this case I expect the Income Tax Department will finally have to publish indices of prices by classes of business to get out of the confusion, but meanwhile we have to set up the Reserve under existing regulations somehow or other.

You will realise of course that the question is of general interest to our Society although I have put it for Retail Stores, because the problem would apply in general terms to any business whose Inventory was made up of a very large number of different items of stock.

Yours very truly,
COMPANY "A".

Reply.

Dear Sirs:

I received your letter of 4th instant enclosing copy letter from one of your members regarding Excess Profits Tax Act.

Our understanding is that the Department at Ottawa is too badly crowded at the present time to give rulings on all of the different points which can be raised regarding the application to individual concerns of the provisions of the Act.

The particular point mentioned by your correspondent is, of course, of considerable interest to retail establishments; but we have no ruling on the matter.

We have been advised that each Company should submit its Return, making such interpretation of the regulations as seems to them to be proper, leaving points of issue to be considered later.

My personal opinion is that the Section in the Act dealing with the reserves for inventories is not worded in such a way as would make it closely applicable to the inventory of a retail store. If the Department finds difficulty in its interpretation of the Section with regard to such cases,

(Continued on Page 338)

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He is not dead, this friend, not dead.
But in the paths we mortals tread
Got some few trifling steps ahead,
And nearer to the end,
So that we too, once past the bend,
Shall meet him face to face, this friend
We fancy dead.

G. M. Mulholland, F.C.A., Toronto Chapter.

W. J. Mundell, C.A., Winnipeg Chapter.

R. R. McLachlan, C.P.A., Niagara Chapter.

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(Continued from Page 335)

it is highly probable that an arbitrary provision will be found acceptable. This arbitrary provision might be on the basis suggested by your correspondent, or some other equally intelligent one.

With kind regards,

Yours very truly,
COMPANY "B".

Dear Sirs:

Your letter of November 4th has been referred to me for reply.

The matter of setting up reserve against inventory, using the 1939 figures as "standard," is receiving our very careful consideration. We regret to have to inform you that we have not yet finally decided on what basis we are going to calculate the allowable reserve.

We are,

Yours very truly,
COMPANY "C".

Sound Common Sense

Below we publish an Editorial in the December issue of "Canadian Business," in connection with advertising in wartime. This editorial deals specifically with increased advertising in its relation to Excess Profits Taxation and the author, Mr. Kenneth McArdle, has treated the subject in a most excellent manner. Not all business is war business but all business can be subject to the Excess Profits Tax. It would seem therefore to be sound common sense to espouse the theory that increased, sound advertising means increased business, increased profits and increased contribution to the war effort through the Excess Profits Tax Act.—Editor.

Excess Profits in Advertising

An Editorial by Kenneth McArdle in the December Issue of
Canadian Business

When war broke loose in 1914, what it did to national advertising in Canada was just too bad. Contracts were cancelled, right and left. In fact, some few companies never did get around to advertising again because by the time the war was over, people had forgotten all about them and their products.

But, for the most part, the panic did not last long. By 1915, general lineage was back to normal and it stayed that way.

This time things are different. World War II was scarcely under way when government closed in on business with both hands on the controls. Imports, foreign exchange, costs and profits were closely scrutinized, restricted and taxed according to the part each could play and pay to help win the war.

Of excess profits, seventy-five per cent were earmarked for the government. Standard earnings were to be determined by averaging previous

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years operations. Nor was business to be permitted to allow its costs to get out of line. A corporation executive who increased his advertising budget beyond a reasonable estimate of anticipated sales might not only be considered an unpatriotic so-and-so but also the government auditors might not accept as an expense the appropriation he had already spent.

Despite chronic grouching for grouching's sake, no one really minded paying taxes and more taxes until it hurt — a lot. But one little problem most businesses faced was this:—in order to pay more taxes to help win the war, they had to sell more of their goods or services. Now, at a time when war industries are humming, employment up and competition keener, the need to advertise more to sell more (the sale of those products not being discouraged by the Government) becomes even more vital.

We talked to a number of top rank advertising men about all this. Without exception, they agreed with these views. However, there was a "but-don't-quote-me" rider on most of their opinions. Like us, they did not wish to expose themselves to the false impression some people might get that they were pushing their own interests to the detriment of their country's.

Therefore, let us be clearly understood. We believe that there is good reason to increase national advertising in Canada next year. But by that we do not mean that there is any necessity to abuse the privilege and opportunity by stretching the appropriation beyond a proper percentage of anticipated sales.

To our way of thinking, however, there is less real danger of tax loss involved in too much advertising than too little. Don't do enough advertising and what happens? Sales and profits drop off and the Receiver General loses out on taxes because the extra money just doesn't live any more.

But increase advertising to reasonable limits and what is the story? Profits and sales increase in tomorrow's market so the government stands to collect higher tax revenues. Company names and products, relations with the public will be stronger than ever when peace comes. What's more, as such increased expenditures might well add to the profits of the various agencies involved in the production of the advertising, the tax return on combined excess profits stands to be even higher than if it had been collected from the advertiser alone.

Finally, remember that this war is different. It is a war of attrition in which sound economics and good business play a vital part. If what we have said makes sense to you, so does an aggressive policy of advertising and selling, for therein rests an up-beat of victory.

Cost Accounting For Government Purchases

An Address to Toronto Chapter by

F. E. WOOD,

Chief Cost Accountant, Dept. of Munitions and Supply, on December 4, 1940.

I wish to express my thanks for the privilege of addressing this Organization and to express the hope that this necessarily brief discussion will be

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of mutual benefit, both to the contracting companies represented here to-night and to the Government.

Before proceeding to deal with the subject of allowable costs on Government contracts, I would like to give you some idea of the volume and variety involved so that you will realize the vast extent of the accounting and cost accounting problems that arise both in the offices of the contracting companies and in the various Departments of the Government.

Modern warfare is on a gigantic scale. No longer is it a matter of man against man and gun against gun. It is a war of plant against plane, tank against tank. It is a war that brings into play every economic, mechanical, and scientific force known to man.

War of such a pattern is costly. It cost about 75c to kill a man in Caesar's time. The cost rose to about \$3,000 per man during the Napoleonic Wars; to \$5,000 in the American Civil War; and then to \$21,000 per man in the World War of 1914-1918; and in the last twenty years it has at least doubled—and perhaps tripled.

The immensity of the impact of modern war upon our economy explains why the authority of the Government has been temporarily extended by various means of control affecting not only business, but the day-to-day life of the individual. It is of no little importance that the reasons for these measures and, shall I say, the philosophy which actuates them, be recognized and understood.

In any great emergency, many considerations which normally govern our way of life become of secondary importance. In war, a maximum of goods must be diverted from civil to military uses; existing plant facilities should be employed before new construction be undertaken; a maximum of plant capacity must be turned over to war orders.

For the past year, we in Canada have been converting as rapidly as possible our peace-time economy into an economy of war. In the third quarter of this year, contracts have been awarded at a rate of nearly 7500 a month, or an average of 325 per working day for the month of September. As of November 27th, the total of orders placed for Canadian account amounted to \$691,000,000, and for British account \$318,000,000, or a grand total placed by the Department of Munitions and Supply of \$1,009,000,000.

Insofar as possible, it has been the policy of the Government to rely on existing plants for securing adequate supplies of munitions and their components. In many cases, however, the necessary plants did not exist, or if they existed, their capacities were inadequate and extensions or the construction of wholly new plants has been necessary. In these plants Canadian industry is producing all the chemicals that are used in the manufacture of explosives, and is producing, or will be producing, some chemicals which have hitherto not been produced in the British Empire. It is producing, or will be producing, almost every type of shell in use in the present war, as well as field and naval guns, gun carriages, aircraft and tank machine guns, anti-tank guns, tanks, universal carriers, mechanized transport, training and fighting airplanes, and practically all other items of essential equipment.

For the Air Training Scheme, practically every unit of dirt-moving equipment and every asphalt plant in Canada has been in use through the

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past season. Twenty million yards of earth have been moved. About 170 miles of hard surface runways have been completed which, if converted into roadway twenty feet wide, would be equivalent to the distance from Moncton to Toronto, or some 850 miles.

It has, of course, been necessary also to construct buildings for the students and personnel, as well as hangars, and to date, 36 schools have been completed and are in operation.

Many types of projects have been undertaken for the Navy such as anti-submarine booms, torpedo nets, etc., and the Construction Division is also supervising eleven projects involving plant extensions for the manufacture of arms and ammunitions, and new plants for the manufacture and repair of aircraft precision and optical instruments.

As no doubt you are aware, the aircraft industry is expanding very rapidly, and is producing planes both for the air training plan, and for Great Britain and Canada.

There is an addition, an extensive ship-building program involving the construction of corvettes, mine sweepers, and many types of smaller vessels. In addition, a number of merchant ships, yachts, and miscellaneous boats have been converted to war use.

To deal now with automotive equipment, the mechanization of modern military establishments and the movement of troops and equipment require large numbers of army vehicles of many types. Canada is particularly fortunate in having a well organized and efficient automotive industry. Steps have been taken to tool up that industry for the production of various types of automotive equipment necessary for mechanized warfare to a productive capacity of about 600 units per day. Some 30,000 military units have been delivered, and orders now on hand will keep the industry employed to capacity until the end of September, 1941.

In the woollen industry, there are 62 mills making military cloths and blankets on contracts received directly from the Government. Present production on these orders is estimated at 60 per cent of the capacity of the woollen weaving industry.

In the cotton industry, there are 23 mills working on orders received directly from the suppliers, and orders received directly from the Canadian Government and British Government.

As you are no doubt aware, the Department of Munitions and Supply, succeeding the War Supply Board, is in charge of all purchasing for the British Purchasing Commission in Canada, and also for the requirements of the Canadian Government. Requisitions are received from the United Kingdom representatives, or one of the Canadian Government Departments, and whenever possible, invitations to tender are issued, resulting in most cases in a Firm Price contract being placed, subject to the usual requirements as to the successful tenderer having the requisite facilities, technical knowledge, etc. (In such cases the transaction is usually completed without audit, although under the provisions of Section 13 of the Munitions and Supply Act, the Minister may direct production of all relevant records so as to disclose the actual cost and profits on any Government purchase.)

The Fixed Price purchase is considered satisfactory in a truly competitive market, assuming however, that there are available a variety of com-

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mercial products or at least a variety of industrial organizations capable of meeting any particular demand when it arises.

Unfortunately, the majority of munitions are not of commercial design, and in many cases are of such a specialized nature that the normal company can not readily undertake the work with their normal line of business. In recognizing and accepting the necessity for dispensing with competitive tenders in certain cases, we remove the natural yardstick for checking prices, and consequently are immediately faced with the problem of ensuring that the price quoted is a proper one. There are various expedients adopted to examine single tender prices, and experienced estimators and accountants can determine labour and material and proper overhead. With this data as a basis, it is usually possible to negotiate with the contractor a price which can be properly certified as meeting the conditions imposed, and this is the procedure which has been followed in peace time in the United Kingdom. Even under peace conditions, this system is not always practicable because sufficient experienced estimators are not available, and because the standard of estimating required to make the necessary allowance for the initial difficulties of learning the job and training labour, is an almost impossible attainment.

Under war conditions we are, therefore, more or less inevitably involved in payment relative to actual cost. Experience in England since the last war has indicated that any system of payment on costs which involves profits being given as a percentage of the cost ascertained, is full of pitfalls, and the problem, therefore, becomes one of reconciling the inevitableness of payment on a cost basis with the desirability of ensuring that the contractor is given every inducement to produce as economically as possible.

This has resulted in adopting in many cases what is known as a Target Price system. In brief, a figure comprising the three elements of labour, materials, and overhead is arrived at, which, in the opinion of both parties, is capable of attainment under the conditions in which the work is to be performed. This figure, which is known as the Target Price, having been decided, it is laid down that the contractor shall receive, if his costs are in fact exactly equal to the target price a sum by way of profit, which is normally taken as a percentage of the target price, but is always expressed as a lump sum and not as a percentage. If the sum of the contractor's costs under the three headings is less than the target price, the contractor is given, in addition to the profit allowance as above defined, a share of the savings effected, usually in some such proportion as 25% to the contractor and 75% to the Government. If the contractor's costs exceed the target price, the profit allowance is subjected to an abatement relative to the excess, subject, however, to the condition that the abatement shall not persist to the extent that no profit at all remains, unless it can be clearly established that there has been undue waste in manufacture. In the actual application of the system, there is, normally, no difficulty at all about ascertaining the true expenditure on labour and materials. On the other hand, to get a true figure, it is necessary for a detailed examination of overheads to be made, and, in that examination, the question invariably arises as to what is and what is not an appropriate overhead for the contract in question.

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Target contracts presuppose the cost plus basis only for the "target" quantity, or usually about 5% of the total production. Once the production costs are ascertained, a fixed price is negotiated for the balance or "remainder" and to this extent the purchase becomes a firm price contract.

In addition to the Target contracts, some purchases are made at a "ceiling" price subject to a cost audit and a reduction in price if the actual cost plus the agreed upon profit is shown to be lower than the "ceiling" price settled.

There are also several variations in contract arrangements which have been found necessary from time to time, but I do not wish to weary you with too much detail, and I think I have already indicated in some small measure at least that there is a very large and important place for cost accounting in the Government work.

Under the Comptroller of the Treasury, a Cost Accounting Section has been established, which is responsible for all cost accounting matters on Government undertakings. This is essentially a fact-finding organization, and reports to the respective purchasing officers fair and reasonable costs on any given article or undertaking. I am mentioning this to make it clear that we, as cost accountants, do not determine the price or the margin of profit, but merely the cost as accurately as it can be ascertained, and to the best of our ability. The administrative body, such as the Department of Munitions and Supply, then sets the price and also the profit margin, taking into account all relevant factors.

In order to carry on this work, we have engaged a large staff of cost accountants, and I think I am safe in saying almost every section of the country is represented in our organization. Several members of our staff are from Toronto and no doubt are personally known to many of you. We have been fortunate in securing the assistance of several permanent Treasury Officers who have been temporarily seconded to the Cost Section, and who are thoroughly familiar with Government procedure; but the majority of our staff have been drawn from commercial life, and nearly all have had many years' practical experience.

I suppose you are all anxious to ask me what has been our experience in auditing the varied contracts, in meeting officials of commercial firms varying from small enterprises to the largest factories in the Dominion, and how many people have been jailed for attempting to defraud the Government! May I take this opportunity to state that we have received the fullest co-operation and that almost without exception managers of contracting companies have put the public interest before private gain, realizing as we should all do, that every dollar saved legitimately will be another dollar available to extend and improve the war effort to the end that victory shall be won, and a permanent peace secured at the earliest possible moment.

I am not suggesting that there has not been honest differences of opinion in regard to costs; nor that we have accepted without question all cost records and claims submitted. It would indeed be strange if every concern's cost records were set up on the same basis, or if the same interpretation were placed on cost accounting data. Some companies are much more conservative in their commercial accounting practices than others, and systems vary from almost too much detail to none at all. We have been repeatedly asked

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to tell contractors what system we require used. Our policy has been not to disturb the contractor's existing system, which presumably he has found most satisfactory for his particular business, as long as it will, in our opinion, reflect the actual costs in sufficient detail for our requirements.

When the War Supply Board was first formed, some contracts made with a "ceiling" price on cost plus a fixed percentage of profit. In carrying out our audits, we found an honest difference of opinion regarding the meaning of costs on which the profits were to be figured. Was it intended that only bare factory cost be used, or factory cost plus administration, or factory cost, administration, selling expenses, etc., etc. So that there would be no misunderstanding in future, the Department of Munitions and Supply have approved a "Standard Cost Procedure," copies of which you have before you, for the guidance of contractors in tendering and as a basis for costing accepted contracts.

This memorandum entitled "Costs of performing a Contract or Sub-contract" was evolved from a study of Canadian, British and American procedure. It was purposely condensed and kept as simple as possible.

The first section, headed "GENERAL RULE," reads:

"The cost of performing a particular contract shall consist only of expenditures made by the contractor in connection with the contract and shall be the sum of:

- (1) Direct Materials
- (2) Direct Labour
- (3) Direct Expenses
- (4) A proper proportion of applicable indirect costs (including a reasonable proportion of management expenses)."

In other words, the basic rule to apply, regardless of any other considerations, is first of all:—Is the charge incurred because of this contract?

The next section is headed "GENERAL ELEMENTS OF COST" and reads:

"No definitions of the elements of cost may be stated which are of invariable application to all contractors, but in general the elements of cost may be defined as:

- (1) Manufacturing Cost
 - I Direct Materials
 - II Direct (or productive) Labour
 - III Direct Engineering Labour
 - IV Miscellaneous Direct Factory Charges
 - VI Other manufacturing Cost
 - V Indirect Factory Expenses
- (2) Miscellaneous Direct Expenses
- (3) Miscellaneous Indirect Expenses."

I think you will agree that with contracts as widely diversified as grading an aerodrome to emergency repairs of ships, and from manufacturing small lots of electrical apparatus in a large commercial plant to costing a continuous single process product in a gigantic wholly Government owned plant, that the preceding sentence is almost superfluous. It is essential that any standard setup be sufficiently flexible to take care of special circumstances.

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To jump for a moment to "Particulars".

"Direct Materials"—includes in addition to materials purchased solely for the contract and processed by the contractor, or material obtained from subcontractors, any other material purchased for stock which may subsequently be used and becomes a component part of the contract."

It is recognized of course, that in many types of contracts, the contractors draw supplies, bolts, nuts, and many standard items from its regular stocks for commercial or other needs, and this provision was merely intended to remove any question of identifying all materials used as being purchased expressly for the particular contract.

"All materials shall be charged to the contract at the net laid down after deducting all discounts and other similar items."

Some commercial firms credit cash discounts earned to their material costs, others keep the cash discounts entirely separate. On Government work all cash discounts must be credited to the contract, unless otherwise specifically provided in the contract itself. Also, no handling charges should be added to material costs, but where incurred should be included in Indirect Factory Expense.

"Costs shall be credited with the fair market value of all scrap produced from materials charged to the contract, either in manufacturing processes, rejects, due to design changes, or from any other cause."

"II Direct Labour—Productive labour which is performed directly on and is properly chargeable to the contract."

"III Direct Engineering Labour—Compensation of professional engineers and draftsmen properly chargeable to the contract."

"IV Miscellaneous Direct Factory Charges—Items properly chargeable to the contract, but which do not fall within any of the above categories. For example, a royalty payable."

"V Indirect Factory Expenses—Factory overhead or burden,

- (a) Labour: supervision and inspection, clerical, timekeeping, stores tool crib, cleaners, watchmen, etc.
- (b) Materials and Supplies: shop fuel, lubricants, waste, non durable tools and gauges, etc.
- (c) Service Expenses: expenses of a general nature such as power, heat, light, operation and maintenance of general plant assets and facilities.
- (d) Fixed Charges: recurring charges such as property taxes, rentals and provision for depreciation. In making provision for depreciation (of machinery) consideration may be given to the number and lengths of shifts, but the provision shall not be inconsistent with the regulations imparted by the Commissioner of Income Tax."

"Allowance will also be made for special rates of depreciation provided under rulings of the Depreciation Board."

- (e) Miscellaneous Indirect Factory Expenses: items not directly chargeable to the contract, such as purchasing expenses, employees' welfare, employer's payments to any Federal unemployment or health fund; but shall not include

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- (1) Payments deducted or chargeable to employees
- (2) Pensions and retirement payments."

Where a commercial firm has in force at the time the contract is awarded a pension scheme which is credited periodically with a percentage of the wages paid to all employees, such a charge would be allowed in costs insofar as it was applicable, but we would not allow lump sum pension or retirement payments on the grounds that such lump sums would in effect be earned over a period of 20 or more years, and the fact that the employee happened to be temporarily on a government contract at the time of the retirement would not justify the inclusion of such charges as a cost of the Government work.

"VI Other manufacturing costs — includes items not properly or satisfactorily chargeable to factory costs, but which upon a complete showing of all pertinent facts, are properly to be included as a cost of the contract, such as:

Experimental and development charges."

This is in effect a safeguard clause to ensure that no proper charge be disallowed because of a technical ruling that it did not fall within any of the preceding clauses.

"2. Miscellaneous Direct Expenses: Sundry items:—fees paid for travelling expenses applicable to the contract, etc.

"3. Miscellaneous Indirect Expenses

(a) Indirect Engineering Expense "Engineering Overhead" consisting of labour, materials and miscellaneous expenses."

B/P Papers, Tracing paper, drafting room supplies, etc.

(b) Administrative expenses including salaries of corporate and executive officers, office salaries, janitors, cleaners, miscellaneous office and administrative expenses such as stationery and office supplies, postage, normal contributions to local charities and other necessary office expenses."

Some of these items may be expressly excluded in the particular contract, for example, salaries of corporate officials.

I would now like to run over the list of exclusions or these items which are automatically disallowed as an element of cost.

"(1) Allowances for interest on invested capital, bonds, debentures, bank or other loans."

This has probably provoked more discussion than any other item. It is quite true that interest charges, whether for a bank loan, or on a bond issue, or in any other form, must be paid. The real question is, are such expenses a charge to costs or to profits? If the same margin of profit is to be paid to two companies making the same article, would it be fair to pay one company more than another simply because one company had provided working capital through bonds or other debentures while the other had secured their funds through common stock issue? The Government policy is that, in fairness to all, interest charges, if incurred, must be provided from profits.

"(2) Entertainment expenses

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- (3) Dues and other memberships other than regular trade Associations
- (4) Donations (except as stated in Section 3, subsection b)
- (5) Losses on other contracts
- (6) Losses from sale or exchange of capital assets
- (7) Depreciation on buildings, machinery or equipment paid for by the Crown
- (8) Fines and Penalties
- (9) Amortization of unrealized appreciation of value of assets."

This refers to the unlikely contingency of a firm writing off assets on an inflated value.

- (10) Expenses, maintenance and/or depreciation of excess facilities."

This limits the contribution by the Government contract to that proportion of the plant facilities actually used for the purposes of the contract.

- "(11) Increases in reserves for contingencies, repairs, compensation insurance, and guaranteed work
- (12) Federal and Provincial income, excess profit or surtaxes
- (13) Unreasonable compensation for officers and employees
- (14) Bond discount or finance charges
- (15) Premiums for life insurance on the lives of officers
- (16) Legal and accounting fees in connection with reorganizations, security issues, or capital stock issues
- (17) Losses on investments, bad debts and expenses of collection
- (18) Advertising and Selling Expenses."

"ALLOCATION OF INDIRECT COSTS — No general rule is applicable in all cases. The proper proportion of indirect costs chargeable to the contract will depend on the ascertaining of all facts and circumstances relating thereto, subject however, to a requirement that all items which have no relation to the contract shall be eliminated from the amount to be allocated.

Provided the articles produced for the contract are of the same general class as the concurrent production of the plant, then allowable indirect expenses may be distributed on the basis of the proportion which the direct productive labour on the contract bears to the total productive labour of the particular section wherein the contract work may be carried out, except that if indirect expenses are incurred in different amounts and in different proportions by the various producing departments, consideration shall be given to such circumstances to the extent necessary to make a fair and reasonable determination. Administrative and other general expenses may be dealt with in a like manner.

In cases where the product is essentially different to the concurrent production, indirect costs wherever possible shall be segregated and the proper items thereof charged direct to the contract."

Many manufacturing firms have distributed indirect expenses or overhead as a percentage of direct labour, either by dollar value or hours, in their commercial work for so many years that it is something of a shock to be faced with the blunt statement that overhead should not be distributed as a percentage of productive labour. Insofar as commercial work is concerned, provided the product is of the same general class or kind, there is

COST AND MANAGEMENT

probably no serious objection to such an allocation, and admittedly it is a very simple and easy system to use. However, even a casual study will show that only a small portion of the charges considered as "overhead" do actually vary in proportion to productive labour, while many charges, such as rent, taxes, insurance, etc., will change very little regardless of whether the plant is working at 10% or 100% of capacity, and in fact many of them will continue even if the plant is shut down. It is also obvious that a scientific distribution of overhead will take into account the actual facilities used on the particular work. For example one particular production might involve a small amount of direct labour and a large amount of machinery and equipment, while another product might require a large percentage of hand labour and very little equipment. Some firms of course have extremely intricate systems, even to the point of developing separate rates of overhead for each machine or production centre. There is always the danger of carrying systems to the point where they defeat their own purposes and the cost is out of proportion to the benefits derived, and I think the real yardstick is to use good common sense in keeping any system as simple as possible provided the essential facts are obtained.

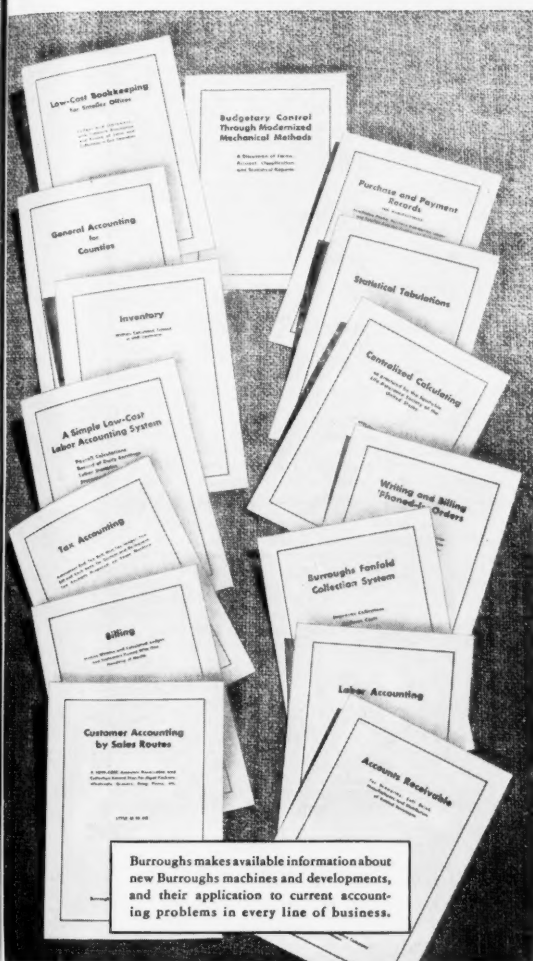
If a Government contract is being produced in a separate unit of the plant, the problem is relatively simple and I am glad to say most of the contracts so far fall into this class.

"ACCOUNTS — Contractor's accounts shall be kept in such a manner as to clearly disclose the nature and amounts of the different items of cost pertaining to the contract, and all records of original entry must be preserved in a form available for ready reference until released for disposal by the Minister."

This is merely the usual provision to guard against difficulty in verifying claims. We have run across one or two cases where firms followed their usual commercial practice and destroyed time cards for instance as soon as the payroll was posted and paid.

I shall be very glad to answer to the best of my ability any questions you may wish to ask, and in conclusion, may I say that we of the Cost Section are very glad at any time to be of any assistance we can to any of the contracting companies on all matters relating to costs on Government contracts.

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ORGANIZATION

The Canadian Society of Cost Accountants and Industrial Engineers was incorporated in 1920, and has functioned consistently since that time. Its membership throughout Canada, and extending into foreign countries, consists of Cost and Industrial Accountants, Public Accountants, Office and Plant Managers, Comptrollers, Secretary-Treasurers, and those engaged in the function of management.

At the present time, eleven Chapters (with other Chapters pending) are actively engaged in the work of the Society, and hold regular meetings throughout the fall, winter and spring, when speakers of repute are heard on various Accounting and Industrial Management subjects, with discussions taking place at the close.

In addition to the regular meetings, Student Sections have been organized in several Chapters, and it is hoped to extend these sections to all Chapters in the immediate future.

These Student Sections are composed of student members who meet under their own officers to discuss matters of moment in connection with their studies and work. So successful have these meetings proved that a number of senior members have been in constant attendance also.

While such meetings are entirely under the control of Student Section officers, senior members assist in every possible way.

The Canadian Society of Cost Accountants and Industrial Engineers is an organization devoted primarily to the study of the many problems of industrial and cost accounting, and does not, as its name might indicate, limit its activities to cost accounting. Many allied subjects, such as Time and Motion Study, Plant and Office Management problems, General Accounting problems and the function of management are among the many and varied subjects dealt with in Chapter meetings.

It is essentially a co-operative movement and aims to study and improve technical methods, to establish sound, general principles and to supply to its members information on the most up to date methods and to assist them in solving their individual problems.

"Cost and Management," a monthly magazine devoted to the problems of the Cost and Industrial Accountant and Management, and which includes articles on allied subjects in addition, is mailed free to members, and the cost to non-members is \$5.00 per year.

A Reference Library of approximately sixteen hundred articles is available on loan to members by mail, as requested.

Employment assistance is rendered to members where possible, and to firms seeking experienced men.

Examinations are held annually for the Society's Certificate of Efficiency in Cost Accounting and Industrial Management.

Powers are being sought by Private Bill through the various Provincial Legislatures to award degrees to members who pass the Society's examinations and when such powers are received the degree will take the place of the present Certificate of Efficiency.

The Society has been maintained in a sound financial position, has never resorted to assessments on members and the general office, and Chapters have now a combined surplus of approximately \$4,000.00.

Membership in the Society is available as follows:

1. Regular Membership at \$15.00 per year. All privileges, including receipt of the monthly magazine.
2. Non-resident membership at \$10.00 per year, all privileges. Available to those located more than fifty miles from the headquarters of the nearest Chapter.
3. Student membership at \$5.00 per year. Available to those studying a bona fide course with a limit of three years. Includes all privileges, except that of voting.

There is no examination requirement for membership and no initiation fee. The Society's financial year ends on April 30th, and new members joining the Society are required to pay the full fee which extends for one year from date of application.

Application for membership must be made on the form provided by the Society, which is available from its Head Office, at 600 MacKay Building, 66 King Street East, Hamilton, Ont., or from any officer or member of the Society.

LIBRARY

Special reference should be made concerning the Society's Library, which is maintained at Head Office. This Library consists of well over sixteen hundred Text Books and articles on all phases of Accounting, Industrial Engineering, Office and Plant Management, and includes many articles on specific industries.

Such articles are available to members throughout Canada, on loan by mail as they are requested, for a period of thirty days. If necessary, the loan may be renewed.

During the past three years an ever increasing number of members have availed themselves of this service, which has proved most helpful.

BENEFITS

The main benefits of membership are:

1. Regular Chapter meetings of both Senior and Student Sections, at which speakers are heard and discussions take place on topics of interest to members generally.
2. Employment service to members and member firms wherever possible.
3. Contact with men engaged in similar occupations.
4. Receipt of the Society's monthly publication, "Cost and Management."
4. Assistance on specific problems wherever possible.
5. Access to the Society's Library.
6. Examinations (optional) which test the knowledge and ability of the candidate in Accounting, Cost Accounting and Business Organization and Management, and which it is hoped will lead to the granting of a degree in the immediate future.

MEMBERSHIP FEES

Fifty per cent. of membership fees are remitted to Chapters for Chapter activities, the balance being retained by Head Office to cover cost of "Cost and Management," Library and general office expenses.

CHARTER

The Society was incorporated by letters patent of the Dominion of Canada on May 3rd, 1920, as The Canadian Society of Cost Accountants.

The applicants for incorporation, who constituted the first or provisional directors, were: James Hutchison, Montreal; R. J. Dilworth, Toronto; F. C. Gilbert, Winnipeg; G. W. Dickson, Halifax; G. E. Winter, Vancouver; G. C. Rooke, Regina; J. B. Sutherland, Calgary, and R. A. MacIntyre, St. John.

On June 10th, 1930, the name was enlarged to The Canadian Society of Cost Accountants & Industrial Engineers. The Society is subject to the Companies Act of Canada, and its operations are governed by by-laws passed at general meetings of the Society.

OBJECTS

The objects of the Society as set forth in its Charter are as follows:—

(a) To promote actively the study and application of the Science of cost accounting.

(b) To develop and foster in commerce and industry a wider adoption of scientific cost accounting methods as an aid to management and executive control.

(c) To provide an organization to facilitate the increase in knowledge and proficiency of its members, in all matters relating to cost accounting and allied branches of commercial and industrial management.

BY-LAWS ADOPTED DEC. 11th, 1936

(Effective from May 1st, 1937)

(Amended May 30th, 1938)

Article 1. Membership

(a) Membership in the Society shall be open to any one 18 years of age or over, who is engaged in or interested in any branch of Accounting, Industrial Engineering or Plant Management.

(b) Application for membership shall be made on the form provided by the Society and shall indicate the Chapter to which the applicant desires to be attached, and shall be subject to the approval of the directors of that Chapter.

(c) The directors of the Society shall have the power to reject any applicant, or to cancel any existing membership for cause.

(d) The directors of the Society shall have the power to grant Honorary Life Memberships to members for services rendered.

Article 2. Fees

(a) Membership fees shall be as follows: Regular, \$15.00; Non-resident, \$10.00 (available to any one residing at least 50 miles from a Chapter meeting place); Student, \$5.00 (available to students actually taking courses in accountancy or business organization, and limited to a maximum of three years).

(b) The membership fee shall be payable to the Chapter, in advance on the 1st day of May in each year. A new member shall be required to pay the full fee on joining and said fee shall extend for one year from date of application.

(c) A member who fails to make payment of his fee within three months from the date when it is payable, shall be liable to have his membership terminated; an unpaid membership shall in any event terminate at the end of the financial year.

Article 3. Directors

(a) The affairs of the Society shall be managed by a Board of Directors which shall consist of: Not less than fifteen and not more than thirty members who shall be elected at the Annual Meeting of the Society to hold office until the next Annual meeting; the presidents of the Society for the preceding ten years who are still members of the Society, and the chairman and vice-chairman of each Chapter.

(b) In the event of a director's retirement for any cause his successor shall be appointed at the next meeting of the Board.

(c) A meeting of the Board may be held at any time at the call of the President or in his absence of the Vice-President. The President shall be bound to call a special meeting of the Board on the requisition of five directors, and should he fail to do so within 24 hours from receipt of such requisition they may convene a special meeting of the Board. Seven clear days' notice shall be given prior to the date arranged for the meeting. The notice shall indicate the nature of the business to be transacted.

(d) For the transaction of business at any meeting of the Board of Directors five shall constitute a quorum. Any question arising at such meeting shall be decided by a majority of votes; in case of a tie, the chairman shall cast the deciding vote.

Article 4. Officers

(a) The Board of Directors shall, at their first meeting after election, elect from among themselves a president, two vice-presidents, an honorary secretary and honorary treasurer, and shall also appoint a general secretary and such officers as the business of the Society shall render expedient from time to time, determining their duties and remuneration.

(b) The president of the Society may designate any member or members of the Board in charge of some special phase of the activities of the Society, and such director or directors shall make a periodical report to the president of their work in that connection.

Article 5. General Meetings

(a) A general meeting of the Society may be called at any time, as follows: By the president; by resolution of the Board of Directors; by written request of at least twenty members in good standing. Such request shall specify the object for which the meeting is called. It shall be the duty of the president, or in his absence the vice-president, on receipt of such request, to cause the meeting to be arranged by the general secretary of the Society.

(b) Notice of a general meeting shall be mailed to each member of the Society at his last known address. Such notice shall state the place, time and purpose of the meeting, and shall be mailed at least 14 clear days prior to the date of the meeting.

(c) Five members present shall constitute a quorum for the transaction of business at any general meeting.

(d) Every member shall be entitled to one vote, which may be given in person or by a qualified proxy.

(e) All questions proposed for the consideration of the members shall be determined by a majority of votes; in case of tie, the chairman shall cast the deciding vote.

Article 6. Annual Meeting

(a) The fiscal year of the Society shall end on the last day of April in each year, and the annual meeting shall be held within two months thereafter at such time and place as the Board shall determine.

(b) A report of the activities of the Society shall be presented at each annual meeting, together with detailed comparative information as follows: Statement of revenue and expenditure; statement of receipts and disbursements; balance sheet; supporting schedules of accounts receivable and liabilities.

(c) At each annual meeting two auditors shall be appointed by the members of the Society from among their number.

Article 7. Chapters

(a) The directors may authorize the formation of local Chapters in such centres as they deem advisable, and designate the territory to be allotted to each Chapter; the directors may make such grants from the funds of the Society as they may deem expedient for the development and carrying on of Chapter work.

(b) Each Chapter shall collect the fees of the members who are attached to it, and shall remit fifty per cent. of said fees to the head office monthly; this remittance shall be accompanied by a statement of additions, deletions and any other changes in the membership list, certified by the secretary-treasurer and at least one other Chapter director.

(c) The fiscal year of each Chapter shall end on the last day of April in each year. The annual meeting of each Chapter shall be held prior to the annual meeting of the Society, and not later than May 31st. Five members present shall constitute a quorum.

(d) Each Chapter shall be governed by a board of directors elected at its annual meeting, of not less than seven and not more than fifteen members. These directors shall elect from their own number a chairman and a vice-chairman. There shall also be a secretary-treasurer, or a secretary and a treasurer, who may be elected by the directors from their own number or who may be a non-member appointed by them. At each annual meeting two auditors shall be appointed by the members of the Chapter, from among their own number. At any meeting of directors of the Chapter, five shall constitute a quorum.

(e) Each Chapter, within one month after the close of its financial year, shall forward to the Society a copy of its audited financial statement, in the prescribed comparative form.

(f) Each Chapter shall have the right to make such regulations as may be found necessary to meet local conditions, subject always to the approval of the Board of Directors of the Society.

Article 8. Corporate Seal

The Society shall have a corporate seal. An impression of the corporate seal, certified by either the president, or the vice-president, and by either the honorary secretary or the honorary treasurer, shall be binding upon the Society, but the officers so certifying shall be personally accountable to the Directors for the due and proper exercise of such authority.

Article 9. Signing Officers

(a) The bank accounts shall be kept in such bank or banks as the directors may from time to time determine; and insofar as the Society's banking business is concerned the directors are hereby authorized to exercise generally all or any of the rights or powers which the Society itself might lawfully exercise.

(b) All cheques or other negotiable instruments not requiring the use of the corporate seal shall be signed by any two of the following: The president, the vice-presidents, the honorary treasurer, and the secretary-manager.

Article 10. Examinations

The Board of Directors shall have power to hold examinations and to issue certificates of efficiency to successful candidates.

Article 11. Amendment of By-laws

The Directors may from time to time repeal, amend, or re-enact by-laws of the Society, but every such by-law and every repeal, amendment or re-enactment thereof, unless in the meantime confirmed at a general meeting of the Society, duly called for that purpose, shall have force only until the next annual meeting of the Society, and in default of confirmation thereat shall, at and from that time, cease to have force.

Article 12

All former by-laws of the Society are hereby repealed.

THE CANADIAN SOCIETY OF COST ACCOUNTANTS AND INDUSTRIAL ENGINEERS

EXAMINATIONS FOR CERTIFICATES OF EFFICIENCY IN COST ACCOUNTING AND INDUSTRIAL AND BUSINESS ORGANIZATION AND ADMINISTRATION REGULATION. AMENDED 1938

"A"—General

1. The Society will grant a Certificate of Efficiency in Cost Accounting and Business Organization and Administration to each person passing its two examinations and submitting a satisfactory thesis.

2. The examinations will be held simultaneously throughout the Dominion at specified dates, in the months of April or May, at such points as may be decided by the Society. The Society will endeavor to hold its examinations at all points at which there are two or more candidates. Supplemental examinations may be arranged in the months of September or October of each year in cases where there are two or more candidates for such examinations.

3. Applications for examinations shall be made on the forms provided by the Society.

4. Candidates, before being awarded the Certificate of Efficiency, shall have at least four years' experience in Accounting or Cost Accounting work and shall have attained the age of 21 years.

5. Candidates must be members of the Society in good standing at the time that the Certificate is granted to them.

6. Candidates are at liberty to answer examination questions in either English or French. Good composition and spelling are general requirements.

7. The pass mark for each subject shall be 60 per cent., and the honour mark 80 per cent.

8. Candidates for the First Examination may obtain exemption from subjects (a) or (b) of the First Examination, by applying for such exemption and furnishing satisfactory proof: (1) That they have passed the Intermediate Examination of any of the following bodies: Any Society or Institute belonging to the Dominion Association of Chartered Accountants; Corporation of Public Accountants of the Province of Quebec; Association of Accountants and Auditors of Ontario; General Accountants' Association; or (2) That they have passed equivalent examinations, of which the Society approves, in any of these subjects.

9. The fees for examination shall be: First Examination, one subject \$5.00, complete \$10.00; Second Examination, each subject \$5.00. No fee shall be required for the Cost Accounting Thesis. Fees for Supplemental Examinations shall be \$5.00 per subject. The fee must accompany the application and will be returned if the application is not accepted or if an examination is not held in a locality which, in the opinion of the Society, is sufficiently convenient for the candidate.

The Educational Committee of the Society may rescind or adjust fees for the subjects of the First Examination, under special circumstances, if, in the opinion of the Committee, that appears advisable.

10. Funds received from examinations shall be reserved for the promotion of educational work of the Society in its various Chapters.

11. Candidates will be supplied with paper suitable for the examinations.

12. A candidate found guilty of any dishonest practice in an examination will be liable to permanent disqualification for examination standing and for membership in the Society.

13. These rules are subject to amendment at any time by Resolution of the Directors of the Society.

14. The Educational Committee of the Society shall each year appoint qualified Examiners for the respective subjects. The duties of the Examiners shall include the preparation of examinations and the inspection and marking of the candidates' papers.

"B"—FIRST EXAMINATION

15. The subjects for the First Examination shall be as follows:

- (a) Bookkeeping,
- (b) Accounting,
- (c) Cost Accounting.

16. The time allowed for examination shall be three hours for each of the above subjects.

"C"—SECOND EXAMINATION

17. The subjects for the Second Examination shall be as follows:

- (a) Cost Accounting, advanced,
- (b) Industrial and Business Organization and Administration,
- (c) Cost Accounting Thesis.

18. The time allowed for examination shall be three hours for each of subjects (a) and (b) above.

19. Each candidate will be required to present to the Society's office, as a part of his Second Examination, a thesis describing an entire costing system, including specimens of the principal forms used. This thesis shall be prepared privately by the candidate, and must be entirely his own composition. Two copies must be forwarded to the Society, one entirely in the handwriting of the candidate, and one typewritten. The thesis should not exceed 10,000 words in length.

OUTLINE OF SUBJECTS

FIRST EXAMINATION

(a) Bookkeeping.

Principles of debit and credit, and the double entry bookkeeping system, including the use of control accounts for subsidiary ledgers, up to and including the closing of a set of books and preparation of trading and profit and loss statements and balance sheets; invoices, statements of account, etc.; bills of exchange and notes; bills of lading and other commercial documents; capital and revenue receipts and expenditures; reserves for bad debts and discounts; depreciation and reserves for depreciation; columnar journals for departmental concerns; cash books, where cash, etc.; banked daily, and where not; imprest system for petty cash; adjustments for interest, expenses paid in advance, accrued charges, etc.; working sheets; single entry.

Books Suggested.

120 Graduated Exercises in Bookkeeping, by Thompson, published by Sir Isaac Pitman & Sons (Canada) Ltd., Toronto. \$1.50. Key \$1.00. Knowledge of definitions from capital cash receipts end, from gross profit to end. Knowledge of the uses of all rulings.

Accounting, by Smails & Walker, published by Ryerson Press, Toronto. \$4.50. Chapters 1-7.

Canadian Modern Accounting, by Spratt & Short, published by Commercial Text Book Co., Toronto. \$3.50.

Elements of Accounting, by Ferguson & Crocombe, published by Sir Isaac Pitman & Sons (Canada) Ltd., 1936.

(b) Accounting.

Operating Statements and Balance Sheets; Trading, general operating or profit and loss, net income, surplus or appropriation, etc.; current and fixed assets and liabilities.

Partnership: The agreement, various kinds of partners, etc.; various methods of sharing profits and losses; closing off a set of partnership books; admission of a new partner; consolidation of partnership, dissolution and sale to a company.

Goodwill and its Valuation.

Manufacturing Accounts: Definition of charge-headings and subdivision and grouping; factory ledger and its accounts; closing off the books of a manufacturing partnership and of a manufacturing company; manufacturing statements.

Criticism of Operating Accounts: Methods of comparison of figures for successive periods; cross-checks.

Departmental Accounts: Organization and records required; internal check; distribution of expenses over departments; statements to show results of departments separately; comparison of results of departments' operations.

Voucher Register System.

Depreciation, various kinds, etc.

Reserves, Sinking Funds, etc.: Reserves which must be made before net profits ascertained; reserves of profits.

Various methods of Quotation: F.O.B., C.I.F., etc.

Incorporated Companies: How a public company is formed, directors, shareholders, etc.; public and private companies; limited liability; common and preferred share capital; different kinds of shares, par and no-par value shares; authorized, subscribed, called and paid capital; bonds and debentures, discounts and premiums; capital and revenue profits and losses; dividends.

Books Suggested:

120 Graduated Exercises in Bookkeeping, by Thompson, published by Sir Isaac Pitman & Sons (Canada) Ltd., Toronto. \$1.50. Key \$1.00. Exercises R to Z, AA, BB and CC. Knowledge of all definitions. Knowledge of subdivision of statements.

Accounting, by Smails & Walker, published by Ryerson Press, Toronto. \$4.50. Chapters 1-11 and 13. Chapter 14, pages 192-200. Chapter 21 for section regarding operating accounts only.

Elements of Accounting, by Ferguson & Crocombe, published by Sir Isaac Pitman & Sons (Canada) Ltd., 1936.

(c) Cost Accounting.

A knowledge of the fundamentals of cost accounting; the essential records, and methods of arriving at cost, including the following: Purposes of cost accounting; elements of cost; process cost systems; specific order cost systems; controlling accounts and the cost records; accounting for materials; material storage and consumption; perpetual inventories and stores control; valuation of materials; accounting for labor cost; wage systems; accounting for manufacturing expense; distribution of service department costs; distribution of manufacturing expense to production; the cost to make and sell; sundry forms; monthly closing entries; preparation of operation and financial statements; cost reports.

Books Suggested:

Cost Accounting, by W. B. Lawrence, published by Prentice-Hall, Inc., New York. \$5.00. Chapters 1-20.

Business Costs, by Eggleston & Robinson, published by Appleton & Co., New York. \$6.00.

Cost Accounting, by Nicholson & Rohrbach, published by Ronald Press Co., New York. \$5.00.

Industrial Accounting, by Sanders, published by McGraw-Hill Book Co., New York. \$4.00.

Cost Accounting, by Jordan & Harris, published by Ronald Press Co., New York. \$4.00.

Cost Accounting Lecture Series, Walton School of Commerce.

SECOND EXAMINATION

(a) Advanced Cost Accounting.

Advanced and detailed knowledge of costing problems, records and practices, and cost accounting in relation to inventories, budgetary control, and other devices of the various departments of a business, including the following: Estimating cost systems, budgetary control, the variable budget, characteristics and uses of standard costs, variances, accounting for standard costs, special considerations, interest on investment, uniform cost methods, building up the Cost Sheet, advantages for auditing, statements, Cost Reports, graphic charts in cost work.

Books Suggested:

Cost Accounting, by W. B. Lawrence, published by Prentice-Hall, Inc., New York. \$5.00. Complete.

Business Costs, by Eggleston & Robinson, published by Appleton & Co., New York. \$6.00.

Cost Accounting, by Nicholson & Rohrbach, published by Ronald Press Co., New York. \$5.00.

Industrial Accounting, by Sanders, published by McGraw-Hill Book Co., New York. \$4.00.

Cost Accounting, by Jordan & Harris, published by Ronald Press Co., New York. \$4.00.

Cost Accounting Lecture Series, Walton School of Commerce.

(b) Business Organization and Administration.

A knowledge of internal organization, both office and plant, of leading types of business concerns, and the functioning of the various departments, including the following: Legal forms of business; general plan of organization of a business; departmental functions and organization—purchasing, production, advertising, sales, shipping, finance, stores, accounting, cost accounting, credit and collection, engineering, traffic, power, maintenance, executive control, location of plant; design and equipment; office organization and management; factory organization and management; employment; wage systems; welfare work; development of new products; net profit angle.

Books Suggested:

Administration of Industrial Enterprises, by Jones, published by Longmans, Green & Co., New York. \$3.75.

COST ACCOUNTING THESIS

A description, which should not exceed 10,000 words in length, of an entire costing system in a major industry, and including specimens of the principal forms used. It should cover actual costs, standard costs and, preferably, budgetary control. A description of costing in a small concern may be accepted if it covers both fundamentals and details.

Two copies shall be presented by the candidate, one entirely in his own handwriting, and one typewritten. The thesis shall be prepared privately by the candidate and shall be entirely his own composition.

LIBRARY

The following is a catalogue of reference literature on hand at head office which literature is available, on loan, to members on request. This literature must be returned within thirty days to head office, and for the purpose of simplicity a list of abbreviations is published below.

Where two or more articles are covered by similar titles, members requesting literature are asked to give the abbreviation. Studies published in the Society's periodical, "Cost and Management," may be purchased where available at 50 cent per copy. Reference literature required on loan is free to members.

Abbreviations

- Acct—The Accountant.
- Accts Jrnl—The Accountants' Journal.
- Accts Jrnl N Z—The Accountants' Journal of New Zealand.
- Accts Mag—The Accountants' Magazine.
- Acct Stud—The Accountant Student.
- Amer Acct—The American Accountant.
- Aust Acct—The Australian Accountant & Secretary.
- Bus Man—Business Management.
- C C A—The Canadian Chartered Accountant.
- Can Off—Canadian Office.
- Can Hot—The Canadian Hotel Review.
- C P A—The Certified Public Accountant.
- C A Aust—The Chartered Accountant in Australia.
- Com Jrnl Acctcy—The Commonwealth Journal of Accountancy.
- Cost Acct—The Cost Accountant.
- C & M—"Cost and Management."
- Inc Accts—The Incorporated Accountants' Journal.
- Ind Acct—The Indian Accountant.
- Ind Can—Industrial Canada.
- Int Man Inst—International Management Institute.
- Jrnl Acctcy—The Journal of Accountancy.
- M I E—Manufacturing and Industrial Engineering.
- N A C A—National Association of Cost Accountants.
- S I E—Society of Industrial Engineers.
- Typo—The Typothetae Bulletin.

A

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CHAPTER OFFICERS—Continued

KITCHENER CHAPTER

Chairman: D. C. Seebach, The B. F. Goodrich Co., Ltd., Kitchener.
Vice-Chairman: J. Babcock, General Rubber Co., Ltd., Galt, Ont.
Secretary-Treasurer: J. Farnsworth, J. Forsyth Ltd., Kitchener, Ont.
Directors: J. Henderson, Newlands & Co. Ltd., Galt; C. R. Kidner, C.A., Savage Shoe Co. Ltd., Preston, Ont.; E. C. Codling, Beatty Bros., Ltd., Fergus, Ont.; V. M. Buchanan, W. E. Woelfle Shoe Co. Ltd., Kitchener; G. R. Good, The Kaufman Rubber Co., Ltd., Kitchener; S. E. Nicholson, C.A., Sheldon's Ltd., Galt.

LONDON CHAPTER

Chairman: C. E. Costain, A. Whitley & Co.
Vice-Chairman: C. J. England, Silverwood's Ltd.
Secretary-Treasurer: F. N. Ware, Murray Shoe Co., Ltd.
Directors: G. W. Foote, Foote & Rafuse; C. F. Rosebrugh, C.A., Millard, Smith, Rouse & McCormick; M. Ballentyne, Holeproof Hosiery Co. of Can. Ltd.; S. T. Rowe, Wright Lithographing Co. Ltd.; J. J. McLaughlin, Maxwell's Ltd., St. Mary's, Ont.; P. C. Goodwin, John Labatt Ltd., London.

WINDSOR CHAPTER

Chairman: E. R. Hutchinson, Walker Metal Products Ltd.
Vice-Chairman: J. T. Wigle, C.A., A. S. Fitzgerald & Co.
Secretary-Treasurer: J. J. Walsh, Fred'k Stearns Ltd.
Directors: H. C. Cox, C.A., Hiram Walker & Sons Ltd.; W. Jordan, Dominion Glass Co., Ltd.; R. G. Millin, Auto Specialties Mfg. Co. Ltd.; R. S. Baird, Dominion Twist Drill Co., Ltd.; A. Whitley, A. Whitley & Co.

WINNIPEG CHAPTER

Chairman: G. H. Elliott, Carter-Hallis-Aldinger Co., Ltd.
Vice-Chairman: T. Z. Woolley, Western Sales Book Co., Ltd.
Secretary-Treasurer: W. Dunbar, Dominion Envelopes & Cartons (Western), Ltd.
Directors: S. D. Willis, International Business Machines, Ltd.; E. D. Mitchell, Great West Saddlery Co., Ltd.; J. D. Sprague, C.A., Gilbert, Laird & Sprague; G. P. Fairbairn, Winnipeg Fuel & Supply Co., Ltd.

EDMONTON CHAPTER

Chairman: W. R. Evans, F.F.C.S., Canada Dry Ginger Ale Co., Ltd.
Vice-Chairman: F. D. Sutcliffe, F.F.C.S., Great West Garment Co., Ltd.
Secretary-Treasurer: Chas. E. Kehoe, Edmonton City Dairy, Ltd.
Directors: Miss Iva E. Crabbe, Trudeau's Cleaning and Dyeworks, Ltd.; C. A. L. Barford, Great West Garment Co., Ltd.; G. W. Andrews, Ogilvie Flour Mills Co., Ltd.; J. W. Tupper, Sunland Biscuit Co., Ltd.; H. Fazackerley, F.F.C.S., H. H. Cooper, Ltd.; A. G. Reid, McGarvin's, Ltd.

VANCOUVER CHAPTER

Chairman: Murray Leith, David Spencer Ltd.
Secretary-Treasurer: Geo. E. Oliver, Murphy Stationery Co. Ltd.
Directors: J. A. H. Irving, Hedlunds Ltd.; T. E. DeWolfe, Jantzen Knitting Mills Ltd.; A. A. McLennan, Pacific Mills Ltd.

FORT WILLIAM-PORT ARTHUR CHAPTER

Chairman: W. J. Strachan, Business Supply Co., Fort William.
Vice-Chairman: A. G. Scott, Provincial Paper Co., Ltd., Port Arthur.
Secretary-Treasurer: H. N. Bickmore, Chapples Limited, Fort William.
Directors: J. F. Thomson, c/o Thos. Falls, Port Arthur; G. M. Brown, Thunder Bay Paper Co., Ltd., Port Arthur; R. E. Chenier, Northern Eng. Co., Ltd., Fort William; J. D. Healey, Port Arthur Shipbuilding Co., Ltd., Port Arthur; E. G. Charnock, The Ogilvie Flour Mills Co., Ltd., Fort William; E. Langford, "Daily Times-Journal", Fort William; C. D. Henderson, Canadian Car & Foundry Co., Ltd., Fort William.

PRINCIPAL DOMINION OFFICERS OF THE SOCIETY SINCE ORGANIZATION

Year	President	Vice-Presidents	Secretary	Treasurer
1920-21	Geo. Edwards, F.C.A.	Isa. Hutchison, C.A.	W. J. Valteau	W. J. Valteau
1921-22	Geo. Edwards, F.C.A.	R. J. Dilworth, F.C.A.	W. J. Valteau	W. J. Valteau
1922-23	Geo. Edwards, F.C.A.	R. J. Dilworth, F.C.A.	W. J. Valteau	W. J. Valteau
1923-24	R. L. Wright	Wm. Carswell, C.A.	M. G. Dolan	John Craig
1924-25	Wm. Carswell, C.A.	R. J. Dilworth, F.C.A.	Henry Glover	G. H. Houston
1925-26	Wm. Carswell, C.A.	John Craig	S. B. Peckham	G. H. Houston
1926-27	John Craig	John Craig	R. S. Smith	G. H. Houston
1927-28	L. Belanger, C.P.A.	L. Belanger, L.A.	L. P. Lortie, C.A.	G. H. Houston
1928-29	James Turner, C.A.	James Turner, C.A.	(Editor and Manager, W. A. McKague)	G. H. Houston
1929-30	R. R. Thompson, C.A.	R. R. Thompson, C.A.	G. C. Leroux, C.P.A.	G. H. Houston
1930-31	S. E. LeBrocq	R. E. Love	(General Secretary, W. A. McKague)	G. H. Houston
1931-32	H. E. Guilfoyle, F.C.A.	H. E. Guilfoyle, F.C.A.	G. C. Leroux, C.P.A.	G. H. Houston
1932-33	L. A. Peto	W. J. Mundell, C.A.	(General Secretary, W. A. McKague)	G. H. Houston
1933-34	G. H. Houston	G. C. Leroux, C.P.A.	G. E. F. Smith, C.A.	G. H. Houston
1934-35	W. J. Mundell, C.A.	L. A. Peto	(General Secretary, W. A. McKague)	G. H. Houston
1935-36	R. W. Louthood	W. J. Mundell, C.A.	(General Secretary, W. A. McKague)	G. H. Houston
1936-37	H. P. Wright	R. W. Louthood	G. E. F. Smith, C.A.	G. H. Houston
1937-38	G. T. Bowden, M.C.I.	H. P. Wright	(General Secretary, W. A. McKague)	G. H. Houston
1938-39	K. A. Mapp, F.C.A.	K. A. Mapp, F.C.A.	(General Secretary, W. A. McKague)	G. H. Houston
1939-40	A. G. Howey	G. T. Bowden, M.C.I.	(General Secretary, W. A. McKague)	G. H. Houston
1940-41	D. R. Patton, C.A.	W. M. Lane	(General Secretary, W. A. McKague)	G. H. Houston

{ G. Appleton
{ F. W. Wright

J. J. McLaughlin W. I. Jardine
(Secretary-Manager, R. Dawson)